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EXAMINER
ALMANI, MOHSEN

ART UNIT	PAPER NUMBER
2155	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
10/596,822</td><td>Applicant(s)
FURUSHO, SHINJI</td></tr>
<tr><td>Examiner
MOHSEN ALMANI</td><td>Art Unit
2155</td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2011*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-19* is/are pending in the application.

    5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-19* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *07/23/2008;10/23/2011*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 03-11)   Office Action Summary   Part of Paper No./Mail Date 20111022

DETAILED ACTION

Response to Amendment and Arguments

1.   Applicant's remarks were filed on 09/06/2011. Claims 16 and 19 have been

amended. Claims 1-19 are pending for examination.

2.   Claim 19 remains rejected under 35 U.S.C 101 because the amended claim is

still directed to non-statutory subject matter. Applicant "encourages the Examiner to give

the broadest reasonable interpretation to the phrase "computer-readable recording

medium" that is consistent with Applicant's specification…in accordance with its

ordinary meaning in the art." To define the "ordinary meaning in the art", applicant has

presented a copy of "Recording medium" definition from WordIQ.com (Applicants

response, page 18.)

        However, the specification is silent about the phrase "computer-readable

recording medium" and it does not limit the medium to non-transitory medium. To

determine the "ordinary meaning in the art", a simple Google search for the terms

"recording medium definition" has been conducted. It is evident from the first definition

that "a data storage device is a device for recoding (storing) information (data).

Recording can be done using virtually any form of energy". Accordingly "a device for

recording information" can be anything capable of recording including transitory

propagating signals. Transitory forms of signal transmission do not belong to one of the

statutory categories of invention. See MPEP 2106.

3.   Applicant's amendments with respect to the rejected claims have been fully considered but are not persuasive for at least the following reasons:

4.   Applicant argues that Kahle, Baum and Mock fail to teach or suggest one or more of the claim limitations recited in each of claims 1-19. Specifically, the limitation of claims 1, 7, 13 and 19:

A. "(i) "allowing each of the processing modules to increase a counter corresponding to a value of the first list by one when a value of the second list is identical to the value of the first list" as recited by independent claim 1, (ii) "a means that, when a value of the second list is identical to a value of the first list, increases a counter corresponding to the identical value of the first list by one" , and (iii) "a function that, when a value of a second list is identical to a value of the first list, increases a counter corresponding to the identical value of the first list by one"" (Applicants response, page 22.)

B. Applicants also argue that: it "is incorrect when asserting that the Baum Patent discloses at col. 22, lines 31-34, a query, which is analyzed by the central computer, constitutes a "second list" received by each of the processors of the present invention (Applicants response, page 26); and

C. "...the value list and array of pointers of the embodiment recited by claim 6 are substantially different from the database index disclosed by the Mock Patent in that, for the embodiment of claim 6, they are provided for each field, whereas the index disclosed by Mock is provided for a specific field within database records."

By carefully reviewing the cited references, it is evident that they do teach the claims language. It's noted that the Office Action is entitled to give the claims their broadest reasonable interpretation. See MPEP 2111 [R-I]. Therefore, the instant claims language with given their broadest reasonable interpretation of the claims, are read on the teaching of cited references:

A. Kahle discloses in col.6 lines 15-17 "Each document of the database is stored…in one or more tables in one or more processor/ memories of the SIMD computer" and further in lines 53-57 discloses that " the significant words of each document are then hash coded and the hash codes are then stored in one or more table in the memories of the processor/memories of SIMD computer. Considering the claim language "allowing each of the processing modules to increase a counter corresponding to a value of the first list by one when a value of the second list is identical to the value of the first list", with its broadest reasonable interpretation, is read on col.7 lines 32-37 where Kahle discloses "if any of the hash code bits has a value of zero [after "searching the hash tables [the first list and the second list] stored in the memories"] the flag [counter] becomes zero…indicating that the word in question is not stored in that table…the flag [counter] is a one, [increases by one] the word is assumed to be in the document represented by that table…the point value associated with that word is awarded to that document and accumulated with any other point values associated with other words in the document."

B. Baum discloses in col. 22, lines 31-34 " Steps 1004 through 1030 are repeated iteratively until all four pairs of lists E,H D,C A,F B,G have been merged and

appear as shown in the WRITE pointer array 714(1) designated for the first pass." Baum

earlier illustrates in figure 8 and describe in col. 19 that "A comparison is performed on

each pair of keys [each pair of a first list and a second list], (E,H D,C A,F B,G). As a

result of the comparisons, the 8 original keys are placed into four new lists of two keys

each 818-824. Each of the four lists comprises the comparison "winner" preceding the

comparison "loser", i.e. E,H D,C A,F B,G. Therefore, Baum does teach "second list

received by each of the processors" to do the comparison.

C. Mock discloses in col. 2, lines 65-67 and col. 3, lines 1-4 "… the index may

be an ordered list of pointers to database records, where the pointers are ordered

according to a field value. Alternatively, the index may be an ordered list of value and

pointer pairs, where the value is the value in the associated field, and the pointer a

pointer to the database record, the ordered list being sorted according to field value."

Mock discloses earlier in the same columns lines 56-64 "One common type of compiled

data is a database index. Large computer systems often support very large databases.

Information may be selectively extracted from such databases by means of various

database queries. Since these queries can consume significant processor resources,

indexes of data are established to support queries of specific fields in the database. An

index is typically associated with a specific field in the database records, and orders the

records in the database according to the value in that field." It is evident that the index

disclosed by Mock is provided for a specific field and each field can be selected

specifically.

Accordingly, Kahle, alone, anticipates the limitations recited in claims 1, 7, 13,

and 19.

Also, Kahle, Baum, and Mock, in combination do teach the limitations recited in

claims 2-6, 8-12, and 14-18.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:
        Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
        matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
        conditions and requirements of this title.

6.   Claim 19 recites a "computer- readable recording medium," which covers

transitory forms of signal transmission when interpreted using the broadest reasonable

interpretation, particularly when the specification is silent about the phrase "computer-

readable recording medium" and does not limit the medium to non-transitory medium.

Transitory forms of signal transmission do not belong to one of the statutory categories

of invention. See MPEP 2106. Therefore, the claim is directed to non-statutory subject

matter. It is suggested that claim 19 be amended to recite a "non-transitory computer

readable storage medium."

Claim Rejections – 35 USC § 102

7.   The following is a quotation of 35 U.S.C. 102 that forms the basis for all the

rejections under this section made in this Office Action:

        A person shall be entitled to a patent unless—

(b) the invention was patented or described in a printed publication in this or a foreign country or in

public use or on sale in this country, more than one year prior to the date of application for patent in

the United States.

8.   Claims 1, 7, 13, and 19 is rejected under 35 U.S.C. 102(b) as being anticipated

over Kahle et al., (U.S. Patent No.: 4,870,568 hereinafter referred to as Kahle).

        As to **claim 1**, Kahle teaches an information processing method of

transmitting/receiving and processing data among a plurality of processing modules in

an information processing system in which the plurality of processing modules, each

having a memory for storing a list composed of values, is logically connected to one

another in a loop (column 4, lines 46-49 and 60-63), the method comprising the steps

of:

allowing each of the processing modules to transmit a first list composed of values

stored in the memory of each of the processing modules to the other processing

modules in the information processing system (column 6, lines 53-57, where "a first

list" is read on "**one or more tables**");

allowing each of the processing modules to receive at least one second list composed

of values transmitted to each of the processing modules, from the other processing

modules(column 7, lines 23-25, where "second list" is read on "**this query**");

allowing each of the processing modules to compare values of the second list with

values of the first list (column 7, lines 32-25, where "compare" is read on "**search**");

and

allowing each of the processing modules to increase a counter corresponding to a

value of the first list by one when a value of the second list is identical to the value of

the first list (column 7, lines 32-37, where "counter" is read on **flag**".)

As to **claims 7, 13** and **19**, these independent claims recite similar limitations,

except in the context of a system, program and computer-readable recording medium

respectively. Therefore, they are rejected under the same rational as stated in the

claim 1.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 2-5, 8-11 and 14-17 are rejected under 35 U.S.C.103(a) as being

unpatentable over Kahle, in view of Baum et al., (US Patent No.: 5,210,870 hereafter

referred to as Baum).

As to **claim 2** Kahle teaches an information processing method of

transmitting/receiving and processing data among a plurality of processing modules in

an information processing system in which the plurality of processing modules, each

having a memory for storing a list composed of values, is logically connected to one

another in a loop (Kahle, column 4, lines 46-49 and 60-63).

Kahle doesn't teach allowing each of the processing modules to transmit a first

composed of pairs of value and compare the list with a second list of pairs of value and

increase a counter by the number of the values in the second list when the value of the

second list is identical to the value of the first list.

However, Baum teaches the method of claim 2 comprising the steps of: allowing

each of the processing modules to transmit a first list composed of pairs of a value and

a number of value stored in the memory of each of the processing modules, to the

other processing modules in the information processing system (Baum, column 22,

lines 31-34, where "a first list" is read on either of four pairs of lists "**E, H D,C A,F B,G**"

and "a number of value stored in the memory" is implied from "**list**") ;

allowing each of the processing modules to receive at least one second list composed

of the pairs of value and the number of value transmitted to each of the processing

modules, from the other processing modules (Baum, column 22, lines 31-34, where "a

first list" is read on either of four pairs of lists "**E,H D,C A,F B,G**" and "a number of

value stored in the memory" is implied from "**list**"); and

allowing each of the processing modules to compare values of the second list with

values of the first list (Baum, figure 8, where comparing values is illustrated by a binary

merge/sort);

and allowing each of the processing modules to increase a counter corresponding to a

value of the first list by the number of the values corresponding to a value of the

second list, when the value of the second list is identical to the value of the first (Baum,

column 28, lines 34-40, where "**DIFFERNCE OPERATION**" compares two identical

values and increases i and j counters.)

Therefore, it would have been obvious to a person with ordinary skill in the art at

the time of the invention was made to have modified Kahle with the teaching of Baum to

use a list composed of pairs of value instead of using a list composed of values

because doing so requires the same efficient execution of the functions required for

data processing: searching, hashing, comparing and incrementing counters in a parallel

processing system.

As to **claim 3**, Kahle as modified teaches an information processing method of

transmitting/receiving and processing data among a plurality of processing modules in

an information processing system in which the plurality of processing modules, each

having a memory for storing a list composed of values, is logically connected to one

another in a loop (Kahle, column 4, lines 46-49 and 60-63), the method comprising the

steps of:

allowing each of the processing modules to transmit a first list composed of values

stored in the memory of each of the processing modules to the other processing

modules in the information processing system (Kahle, column 6, lines 53-57, where "a

first list" is read on "**one or more tables**");

allowing each of the processing modules to receive at least one second list composed

of values transmitted to each of the processing modules, from the other processing

modules (Kahle, column 7, lines 23-25, where "second list" is read on "**this query**");

allowing each of the processing modules to compare values of the second list with

values of the first list (Kahle, column 7, lines 32-25, where "compare" is read on

"**search**").

allowing each of the processing modules to increase the count of a value of the first list

that ranks immediately next to a value of the second list, by one, when the value of the

first list ranks lower than the value of the second list (Baum, column 28, lines 25-30,

counter i is increased by one.)

      As to **claim 4**, Kahle as modified teaches an information processing method of

transmitting/receiving and processing data among a plurality of processing modules in

an information processing system in which the plurality of processing modules, each

having a memory for storing a list composed of values, is logically connected to one

another in a loop, (Kahle, column 4, lines 46-49 and 60-63), the method comprising the

steps of:

allowing each of the processing modules to transmit a first list composed of pairs of a

value and a number of value stored in the memory of each of the processing modules,

to the other processing modules in the information processing system (Baum, column

22, lines 31-34, where "a first list" is read on either of four pairs of lists "**E, H D,C A,F**

B,G" and "a number of value stored in the memory" is implied from "**list**") ;

allowing each of the processing modules to receive at least one second list composed

of the pairs of value and the number of value transmitted to each of the processing

modules, from the other processing modules (Baum, column 22, lines 31-34, where "a

first list" is read on either of four pairs of lists "**E,H D,C A,F B,G**" and "a number of

value stored in the memory" is implied from "**list**"); and

allowing each of the processing modules to compare values of the second list with

values of the first list (Baum, figure 8, where comparing values is illustrated by a binary

merge/sort); and

allowing each of the processing modules to increase a counter corresponding to a

value of the first list ranked immediately next to a value in the second list by the

number of the values corresponding to the value of the second list, when the value of

the first list ranks lower than the value of the second list (Baum, column 28, lines 34-

40, where i is increased when L1(i) is less than L2(j).)

As to **claim 5,** Kahle as modified teaches an information processing method of

transmitting/receiving and processing data among a plurality of processing modules in

an information processing system in which the plurality of processing modules, each

having a memory for storing a list composed of values, is logically connected to one

another in a loop (Kahle, column 4, lines 46-49 and 60-63), the method comprising the

steps of:

allowing each of the processing modules to transmit a first list composed of values

stored in the memory of each of the processing modules to the other processing

modules in the information processing system (Kahle, column 6, lines 53-57, where "a

first list" is read on "**one or more tables**");

allowing each of the processing modules to receive at least one second list composed

of values transmitted to each of the processing modules, from the other processing

modules(Kahle, column 7, lines 23-25, where "second list" is read on "**this query**");

allowing each of the processing modules to cancel a value of the second list when the

value of the second list exists in the first list, and, when identical values exist in two or

more second lists, allowing each of the processing modules to cancel the value of one

or more second lists that, appear later among the two or more second lists (Kahle,

column 7, lines 32 -37, where "the flag is a one" indicates that that the value is found

and canceled form the second list); and

allowing each of the processing modules to increase a counter corresponding to a

value of the first list that, ranks immediately next to the value of the second list, by one,

when the value of the first list ranks lower than the value of the second list (Baum,

column 28, lines 25-30, counter i is increased by one.)

As to **claims 8** and **14**, these independent claims recite similar limitations, except

in the context of a system and a program, respectively. Therefore, they are rejected

under the same rationale as stated in the claim 2.

As to **claims 9** and **15**, these independent claims recite similar limitations, except

in the context of a system and a program, respectively. Therefore, they are rejected

under the same rationale as stated in the claim 3.

As to **claims 10** and **16**, these independent claims recite similar limitations,

except in the context of a system and a program, respectively. Therefore, they are

rejected under the same rationale as stated in the claim 4.

As to **claims 11** and **17**, these independent claims recite similar limitations,

except in the context of a system and a program, respectively. Therefore, they are

rejected under the same rationale as stated in the claim 5.

11.   **Claims 6**, **12** and **18** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kahle in view of Baum as applied to claim 5, 11 and 17 above, and further in view

of Mock et al., (US Patent No.: 6,820,217 hereafter referred to as Mock).

As to **claim 6**, Kahle as modified does not teach claim 6 limitation, however Mock

teaches the information processing method according to claim 1, wherein each of the

processing modules stores table-format data represented by an array of records

including field values contained in an information field in the memory in a form of a

value list in which the field values are stored in order of field value numbers

corresponding to the field values and an array of pointers in which information for

specifying the field value numbers is stored in order of records, and wherein said list

composed of the values is said value list that constructs the table-format data. (Mock,

column 2, lines 65-67 and column 3, lines 1-4).

Therefore, it would have been obvious to a person with ordinary skill in the art at

the time of the invention was made to have modified Kahle with the teaching of Mock

because the method that Kahle discloses stores table-format data in the processing

modules (Kahle, column 6, lines 15-17). The method that Mock teaches also stores data

in table formats (Mock, column 8, lines 2-3). Combination of Kahle and Mock methods

would allow processes of data, using an ordered list of pointers to database records,

where the pointers are ordered according to a field value.

Claims 12 and **18** have similar limitation as to claim 6; therefore, they are

rejected under the same subject matter.

Conclusion

12.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in CRF 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MOTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date of the advisory action is mailed and

any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing dated

of the advisory action. In no event, however, will the statutory period for reply expire

later than SIX MONTHS from the mailing date of this final action.

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to MOHSEN ALMANI whose telephone number is

(571)270-7722. The examiner can normally be reached on M-F, 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Perveen Rehana can be reached on 571-272-3676. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

14.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MA/
October 23, 2011

/Rehana Perveen/
Supervisory Patent Examiner, Art Unit 2155